DOCUMENT RESUME

ED 262 437 CS 505 041

AUTHOR Malik, M. F.
TITLE Biocybernetic Communication Research 1967-1984.
PUB DATE 84
NOTE 12p.
PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Communication Research; Course Descriptions; Foreign Countries; Higher Education; *Mass Media; *Research and Development Centers; *Research Projects; *Speech Communication
IDENTIFIERS *Biocybernetics; *Myer Pollack Communication Research Lab (Quebec)

ABSTRACT

This paper introduces and explains what was being done in biocybernetic communication research at the Myer Pollack Communication Research Laboratory in Montreal (Canada) from 1967 to 1984. It also lists persons and researchers directly involved in the activities and projects of the laboratory. The paper concludes with brief descriptions of five communication courses taught within the department of communication studies at the laboratory and a list of three future streams of development within the frameworks of the Myer Pollack Communication Research Laboratory. (HOD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)
X This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ED262437

Dr. M.F. Malik

Biocybernetic Communication Research
1967 - 1984

In September 1967 an idea of a communication research laboratory was conceived in the Department of Communication Arts as a place, where the effects of mass media information stimuli, like film, television programmes, photographic pictures or texts could be examined and analysed in a scientific way.

The first physical set-up consisted of a few tachystoscopes, infra-red registrators and mechanical audience respondent dials measurements. Speeds were limited to 1/10th of seconds and much of the communication analysis were of manual, graphical origins. The space in the basement of the O'Brien building was limited to 8 sqm.

First financial subsidy came as a private grant from Fleetwood Industries. $5,000.00 in 1968 were given by Myer Pollack for purchase of eye-movement dectector - the infra-red oculograph Eye-Mark I. In that time it was a first installation of oculographic equipment device in Canada for the purposes of mass audience impact measurement.

During the 1968-1979 academic year, more than 120 projects were realised on various analytic exercises of photographs, film clips and television scenes.
In 1970 the department had organised a communication arts summer institute in Europe. Our research laboratory procedures and methodologies were shown and demonstrated at 8 european film schools and at 5 television networks (England, France, Germany, Austria, and Italy) with considerable success. On account of this action our department was accepted as the only Canadian representative to the World Council of Film and Television Schools (CILECT).

In 1972 laboratory received major grant of $78,000.00 from an anonymous foundation. Building the laboratory took two years to accomplish. In 1974 laboratory on the fourth floor of the O'Bryan Building was opened. It contained the programmmed multi-media system for 60 audio and video channels, modern and advanced biometric set-up and basic equipment for experimentation in holography.

The laboratory was dedicated to Myer F. Pollack, President of Fleetwood Industries, who had pioneered the radio and television industry in Canada.

The aims of the laboratory were postulated as:
- to foster research in the new communication media
- to foster research in the measurements of the information impact of existing communication media
- to foster reserch in the field of cross-cultural communication caused by media.

CS 505041

PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
M. F. Malik
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

The Main Areas of Research were designated:

1. New Communication Media:

   - 3D Film and Television
   - Coherent Light Communication Devices
   - Information Matrices Development and Effects

2. Media Impact on Society:

   - Psychological Impact Measurements
   - Biometric and Biotelemetric Visual and Audio Information Measurements
   - Psychological Impact of Information

3. Information Barriers:

   - Cross-cultural Information Exchange and Impact
   - Data Transmission Cross-Cultural Impact
   - Inter-species Information Exchange and Impact

Projects in the Myer Pollack Communication Research Laboratory were carried out in three broad streams:

A. Communication Analysis

Studies and projects aimed at the assement of reality to communication purposes. By use of the system theory, cybernetics and multi-variate analyses, various realities (such as buildings, streets, interiors, parks, landscapes, social situation) were assessed for the purpose of film, television and radio programming, for urban and environmental studies, for cross-cultural and social use of communication media.

B. Communication Research

These studies were aimed at the information impact on humans. By the use of biometrical and biotelemetrical methodology, various mediated information (pictures, sounds, radio, film and television programmes) were tested on sample audiences. The measurements and tests were carried out mainly to help the artists create his artwork in the communication industry.

C. Communication Programming

These were studies of a syntactical nature, aimed at information design, the assembly of artwork using one or more communication media. The emphasis of projects were on the programming or "orchestrating" of mediated information into coherent artwork. Methodology and instrumentation of mechanical, electromechanical and electronic programming was applied with programmes performed in 3D space. A holographic approach was used.

During the period of 1973-1976 the methodology of biometric audience responses measurement was demonstrated on two national and 8 regional seminars to the Canadian Broadcasting Corporation personnels. More than four hundred producers, designers, and programming executives were attending those seminars. Radio-Canada Montreal had published the proceedings of a seminar under the title:
"Dessins de l'Information" in 1976. After our example, commercial laboratories for audience response measurements were established in U.S.A., Europe, Australia, and Japan.

As early as in 1973, more advanced research was carried out in the Myer Pollack Communication Research Laboratory aimed on the basics of artificial intelligence units used for biofeedback application of biometry. Canada Council gave a grant to this task, "High level video digital language". The grant was aimed on artists (producers or designers) of television programmes, using audience biofeedback during the production of art piece.

In the early 70's part of the laboratory activity was devoted to laser technology application to film and televison production. Small experiments were performed during 1974-75 at CBC serminars. In 1976 an international seminar on holography was held by the Department of Communication Studies. The leading figures of research were attending this seminar: Professor Komar from the USSR, Professor Yeong from the USA, Professor Eigel from Czechoslavakia. The lectures of this seminar had attended more than 1,500 participants. From that year holographic seminars were held at the laboratory.

In 1979 the biometric laboratory was completed with X-Y plotter and portable visual detector camera. Both gave to our unit versatility and portability. Within the next two years 76 projects were completed with location components.

In 1981 the first telemetric system was installed with the range diameter of 2½ miles from the transmitter and connected to the biometric laboratory.

In 1983 new datagraph for multi-channel electroencephalographic recordings was purchased and used in two academic courses.

At the present time, the laboratory works in three distinct fields:

1. 3D Communication Media

   Investigation into three-dimensional film and television systems holographic systems, potential audiences, programmes, designs.

2. Media Information Impact Laboratory

   Biometric and biotelemetric testing laboratory, aimed at the pre-production testing and evaluation audience research for communication media, studies in the communication analysis for prospective media programmes.

3. Cross-Cultural Communication Testing Unit

   Mobile biometric laboratory aimed at the comparative testing of information media impacts on minorities, ethnic and aboriginal groups.

PROGRAMME ACTIVITES of Myer Pollock Communication Research Laboratory consists of:

1. Research Projects:

Specific tasks, performed for governments, universities, other research institutes and communication media industry in the areas of:

Information Analysis
Systems Analysis
Information Value Assessments
Information Impact Measurement

2. Academic activities:

Small, specific academic programme in the field of 3D communication and biometric research is conducted on an internship basis at the laboratory.

Academic Program:

1. Advanced Tutorial Graduate courses in:

Communication Analysis
Communication Research
Communication Programming

2. Seminars for professionals in:

Information Design
Information Impact of Media
Information Measurements

Periodic short courses in specialized research topics are held from time to time.
Meetings, seminars and conferences for professionals from communication media industry are held periodically on topics of the research projects.

3. Consultations:

Members and research associates of the institute are available for a wide range of consultations to governement and industrial agencies.

4. Publications:

Research result, reports, academic, theorectical works, scholarly papers, year end reports are published by the laboratory's departments.

Persons and researchers directly involved in the activities and projects of the Myer Pollack Communication Research Laboratory:

1. Concordia University

Dr. M.F. Malik - involved in 8 researhd projects, teaching 4 research courses with the use of the laboratory

P. Bringolf - involved in 2 research projects, teaching on para-academic seminar n holography

H. Thwaites - involved in 3 research projects

Dr. V. Zeman - Dept. of Philosophy - involved in 1 research project

Dr. N. Metallinos - involved in 1 MA project

2. University of Montreal

Dr. E. Cerny University of Montreal (Informatheque) - involved in 2 research projects

3. University of Calgary, Alberta

Dr. D. Bresky - involved in 1 research project (leader), 1 planned research project (participant)

4. Humber College, Rexdale, Ontario

Prof. G. Fallada - involved in 1 research project

Reseachers and resource persons involved in the laboratory activities as consultants:

Radio Canada: R. Giroux - Centre de perfectionnnement professionel
J.C. Rinfret - Direction de programmation

Radio Quebec: K. Ludvik - Director de programmation

CBC - Toronto: L. Lawrence - ESD Training Department
V. Strazovec - ESD Scenographic Institute

CBC - Edmonton: W. Porth - Director

CBC - Vancouver: G. Syroitschko - Personnel manager

Tele-Metropole: J.P. Ladoucer - Producer

NFB: R. Blais - Producer
C. Low -Director, Research committee
G. Graham - Past Research Director

GPL Architects: C. Provencher, Architect

GPG Group: M. Pflug, Consultant

Parks Canada: Bob Dore, Consultant

INSAS - Bruxelles: R. Ravar, Director

British National Film School - London: C. Young Director

Australian Film and Television School: S. Walton, Director

Hochschule fuer Film und Fernsehen: K. Langsfeld Professor

Film Institute - Zagreb: M. Ilic, Research Director

Pomona University - California: E. Rose, Dean of Arts and Science

Ohio State University: R. Wagner, Professor Emeritus

San Francisco State University: H. Zettl, Professor

Alaska University: J. Roederer, Dean of Arts and Science

Nihon University: C. Yagi, Professor

NASA: B. Kurtz, 3D Director

U.S. Dept. of Education: R. Blum, Grant Director

Research Programme of Myer Pollack Communication Research Laboratory

Research in Progress:

1. Aesthetical Information Impact of Literary Text
(Joint project with University of Calgary - Prof. D. Bresky)
1978-1988.

2. World Video Encyclopedia
(Joint project with Government of Alberta, Dr. D. Morton)
1977-1990.

3. UNICODE - World Information Network
(Joint project with University of Calgary - Prof. L. Grossman.
1976-1986.

4. Information Matrixes
(Joint project with University of Alaska - Prof. J. Roederer, University of Vienna - Prof. R. Brix, University of Uppsala- Prof. V. Gabrielson, and University of Zurich - Prof. V. Krulis)
1977-1990.

5. Musée National de la Civilisation
(Joint project with PGL Architects of Montreal and Government Quebec)
1981-1988.

6. Biometric Profiles of Classical Art Compositions
(Joint project with University of Utrecht, Holland - Prof. E. Reznicek)
1981-1988.

RESEARCH PLANNED:

1. Biometric Analysis of Teletext Systems
(H. Thwaites - project leader)
1981-1986

2. Spatial Communication Analysis of National Parks, Landscapes and Historical Monuments (Dr. M. Malik and B. Dore - National Parks - project leaders)
1982-1988

3. Biometric Analysis of Holographic Images
(H. Thwaites, Prof. O. Schwelb (Project Leaders), P. Bringolf
1982-1986.

4. Biometric Investigation of Symbolic Information Complexes
(Dr. M.F. Malik - project participant, in cooperation with Prof. J.E. O'Brien (project leader) and Social Communication Centre, London)
1983-1986

5. Biometric Investigation of Multi-Screen Information Complexes
(Dr. M. Malik - project participant; joint project with Dr. H. Zettl (project leader), San Francisco State University
1983-1993

6. Biometric Investigation of Sound Information Complexes
(Dr. M. Malik - project leader; joint project with University of Vienna, Prof. R. Brix, University of Thubingen, Prof. V. Breitenberg, University of Munich, Prof. V. Terhardt and Osiach Symposium, Austria)
1983-1990

7. Digital Biometric Data Extraction
(Dr. M. Malik - proejct leaders; joining project with University of Montreal, Prof. E. Cerny and IMDT Vienna, Prof. V. Blankopf)
1984-1987

Academic Programme

The involvement of Myer Pollack Communication Research Laboratory is centered on communication environment. A number of specific courses are taught within the department of communication studies, pertinent to this matter:

COMS-255-Communication Analysis of Environment

The scientific assessment of the communication environment and its specific physical, formal and behavioral phenomena is possible through methodical data gathering, called COMMUNICATION ANALYSIS. Through this method, developed in many variations, we can assess a piece of the environment - street, house, room, museum, gallery, church, discotheque, train or bus ride etc. in its communication potential, its basic elements, which later influence the intensity and density of messages actually perceived by an audience.

Communication analysis is oriented towards information sources, i.e. beginning of information chain, which makes effective communication possible later. It does not take into consideration variables of the individual perceiver - cultural, geographical, historical, political, etc. This compulsory course is taught as tutorial during the first year of study.

COMS - 351 Biocybernetic Communication Research

A more detailed and specific look at these communication potentials is offered through the approach called COMMUNICATION RESEARCH, where scientific investigation is carried to all phases of the information chain that are in the source, in the transmission conditions, and in the perceiver. The basic assumption of my understanding of communication research is in the definition of information as an energetic process with a catalytic character. Therefore, the method of investigation must be relevant to the measurement of energy in a mobile state. As we center on the human species, the brain becomes the focal point in perceiving, processing and storing information for communication. The methodology used is para-medical, neurophysiological its basic nature, and the extraction of data uses electrical, electrochemical, or radiostope technical means. The methodology developed here is called biometry or biotelemetry, and it refers to the measurement of biometric potentials in the human brain during and after the perception of an information quanta or an information cascade (film, television program, sound, written or spoken text). This is a second-year, six credit laboratory course.

COMS - 496 - COMMUNICATION PROGRAMMING

The advanced approach to the communication environment is called COMMUNICATION PROGRAMMING. This term refers to the activity or orchestrating, coordinating many different information media (film, photography, sound space) from pieces to an organized communication environment, which influences one or more senses of the perceiver. Classical pieces of programmed information environment can be a cultural or mercantile exhibition (Expo 67, Osaka 70, Bruxelles 57, Knoxville 82, Disneyland), various museums or galleries (Noricams, Science Museums); but also many department stores, churches entertainment centers use a multi-media programmed approach to influence visitors. Communication programming has its own technology of programmers with mechanical, electromechanical, eletronical and lately microprocessor and holoprocessor means. The skill of the communication programming is similar to the skill of a musical composer, where various media - rather than instruments of the orchestra - are orchestrated in to the final program. This is a third-year, tutorial, laboratory course.

COMS - 320 - History of Communication Media Carriers

The communication environment has been with us for many centuries, and some attempts to analyse, research or programme it have been recorded from past centuries. We can see it in the historical approach to the communciation environment understanding, a collection of facts, examples, authors and artifacts called the HISTORY OF COMMUNICATION ENVIRONMENT AND ITS COMMUNICATION MEDIA CARRIERS. Here we may see the attempts of ancient, medieval or modern many to organize this visual, aural and spatial pieces or reality into the complexes which influence the communication life of humans. This is a second-year self-instructional, programmed learning lecture course.

COMS - 565 - Media Information Analysis and Design

During the present time, more and more emphasis is given to the careful planning of informational campaigns, cluster, or messages, aimed at a specific audience. This approach I call MEDIA INFORMATION DESIGN. Here, the purpose or planned goal, is that the specific variables of the audience determine the medium, the structure, form and final expressive means of the information. This is a laboratory, graduate course.

There is an extensive body of study and literature available for each of the approaches outlined. Major studies are stored in the ERIC Databank, Speech Module, Syracuse, N.Y. Here are the titles of some studies pertinent to the matter:

- Communication Analysis of Information Complexes
- Information Analysis of Sound Information Complexes
- Aesthetic Information Impact of Artworks on Human Mind
- Television Content
- Aesthetic Information Impact of Literary Text
- Information Design
- Biometric communication Research for Film and Television

Radio Canada published in 1976 a book entitle Dessins de l'Information (available from Service Scénographique, Radio Canada, Montreal), where those major theories are applied to television production.

The Future Developments of
Myer Pollack Communication Research Laboratory
1984- 1990

There are three future streams of possible development within the frameworks of Myer Pollack communication Research Laboratory:

1. Biocybernetic Assessment of information impact on mass media audience.
   Here, more sophisticated data extraction methods are planned. Recent developments are including chemospectrography of the brain (brain cortical scans), radiospectrography of the brain (CAT - Scans) and magnetometry of the brain.

2. Cross-Cultural Communication Biocybernetic Unit.
   Here, mobile biometric laboratory is planned with emphasis on field work condition for multi-channel, biotelemetric set-up. The cross-cultural aspect will be centered on Inuit, Amerindian and Pacific indigenous population

3. Communication Programming Testing Stage
   Here, a broad range of experiments is being planned with the used of research stages and programmers of the laboratory. A Multi-Media, - scenographic approaches will be tested as real 3-D unit for future holographic film and television scanning.

Those three approaches will be activated through research tests, academic courses and periodic seminars.

Fall 1984